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The plant seems distinct and may be designated and described as

***Proserpinaca intermedia***

Glabrous, the stems decumbent at base, rooting, about 3 dm. high, simple or somewhat branched. Leaves of two kinds; blades of submerged ones pectinate-pinnatifid, divided to the rachis; blades of emersed ones oblong-lanceolate, pectinate, the stiff segments entire, acute, the central part of blade one-third of its width; flowers sessile in axils of emersed leaves, one to few together; sepals triangular, acute, convergent; fruit 4 mm. long and about as wide, sharply angled, the faces flat or slightly concave, wrinkled or rugose.

Specimens examined:

NEW JERSEY. Boggy soil along Pennsylvania right of way about half way between Barnegat Pier and Island Heights Junction, Ocean County, *Mackenzie* 2890, Sept. 1907 (type in Herb. K. K. Mackenzie; duplicates will be deposited in Herb. N. Y. Bot. Garden and Gray Herbarium);

GEORGIA. Wet pine barrens east of Douglass, Coffee County. *Harper* 1527, July 19, 1902; in small branch swamps in pine-barrens near Fitzgerald, Irwin County, *Harper* 2210, May 18, 1904.

KENNETH K. MACKENZIE

REVIEWS.

**Osborne's Vegetable Proteins\***

Dr. Osborne has done a great service to chemists and to those interested in the chemistry of plants by the publication of this monograph upon the proteins of vegetable origin. This subject has been his life-work and surely there is no one, here or abroad, better qualified to write upon it. The proof of this is the fact that the book is largely an outline of his own work and conclusions. Dr. Osborne treats first of the general characteristics of these proteins, the manner of preparation, their general physical and chemical properties, their decomposition products, and their classification. The last chapter is exceedingly interesting,

\*Osborne, Thomas B. *The Vegetable Proteins*. Pp. 125. Longmans, Green, & Co., London and New York. 1909.

being a treatment of the physiological relations of the proteins of plants. In this place he introduces a discussion of the toxalbumins such as ricin, the exceedingly poisonous constituent of the castor-bean, and he also treats of the precipitin and agglutinin reactions of the proteins. At the end, the author has compiled a bibliography of more than six hundred titles, all dealing with the literature of the subject. This bibliography is sure to be indispensable to all future investigators in this field.

The botanist should be interested in this subject because any light that can be thrown on the composition and physiology of the proteins of plants, especially those from seeds, would help to clear up the important phenomena of germination and so forth. Furthermore, the isolation of sharply-defined and characteristic proteins from different plants and especially the fact that plants closely related botanically yield proteins that may be grouped together chemically, all go to show that morphological differences go hand in hand with deep-seated chemical differences, a supposition that ought to be studied much more closely than in the past. The newer immunity reactions of the blood-serum of animals ought to serve as a very delicate test for the relationship of plant constituents just as it has proved so useful in the study of normal and abnormal substances in the case of man and the animals.

To the chemist, Dr. Osborne's book should bring the results of an exact chemical study of the proteins, substances whose importance in both plants and animals can hardly be overestimated. The complexity and cell associations of those substances prevent their isolation in a pure state. Fortunately, however, the vegetable proteins can be prepared in a much greater state of purity than almost any of the proteins of animal origin. The result is that studies made upon proteins from plants are very likely to be productive of great advances in our knowledge of the structure and properties of proteins in general. The constancy of the composition and properties of certain of the plant proteins are so great as to lead one to think that definite chemical individuals are being studied. This is a reassuring thought to a chemist working upon proteins who, too often, is afloat in un-

known waters with the usual beacon-lights of chemical identity gone, I mean such data as melting points, crystalline form, and so on. Finally, it seems that the publication of work such as that of Dr. Osborne on the border-land of botany and chemistry may bring together the two sister sciences which, too long, have trod paths that are somewhat parallel but still too widely separated.

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## PROCEEDINGS OF THE CLUB

MAY 25, 1910

The Club met at the Museum of the New York Botanical Garden at 3:30 P.M. Dr. M. A. Howe occupied the chair. Twelve persons were present. The minutes of the last meeting, May 10, were approved.

A letter was read from the recording secretary of the New York Academy of Sciences in which he stated that he knew of no arrangements whereby the expenses of popular lectures given by the affiliated societies at the American Museum of Natural History could be met by the funds of the Academy. It was voted that the treasurer of the Club meet the bills incurred at the meetings of March 8 and April 12.

First on the announced scientific program was a paper entitled "Moss Notes" by Mr. R. S. Williams, of which the following is an abstract prepared by the speaker.

"*Leucobryum* or white-moss is so called from the structure of the leaf which is about like *Sphagnum* in having the chlorophyll-cells surrounded by hyaline, empty, porose cells, thus giving a whitish appearance to the moss. The fruit, of course, is very different from *Sphagnum*, much resembling that of *Dicranum*. *Leucobryums* are chiefly tropical although the type of the genus, *L. glaucum*, is widely distributed over Europe and in North America from Labrador to Florida and westward to the Mississippi valley. There have been over 120 species described, many of which can scarcely be considered as well defined. Out of some eighteen or twenty species credited to North and Central